

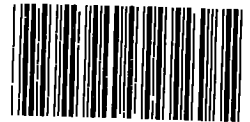
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UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

FOR RELEASE ON DELIVERY  
Expected at 9:30 a.m., Est.  
Wednesday, November 18, 1981

SUMMARY OF STATEMENT OF  
ROBERT A. PETERSON, SENIOR ASSOCIATE DIRECTOR  
HUMAN RESOURCES DIVISION

BEFORE THE  
COMMITTEE ON VETERANS' AFFAIRS  
UNITED STATES SENATE



116885

ON

AGENT ORANGE

GAO has reviewed the draft protocol for epidemiological studies of Agent Orange submitted to the Veterans Administration by the UCLA researchers and believes that

- the proposed feasibility study to determine troop exposures would be costly with no guarantee that it would identify a population of ground troops with measurable exposure, and would delay the start of the epidemiology study,
- the data bases the UCLA researchers propose using for the mortality and morbidity studies may contain inadequate or inaccurate information which could limit the usefulness of these studies, and
- there are serious questions about the possible adverse affects of exposure to Agent Blue and other chemicals used in Vietnam.

Expansion of the epidemiology study to determine whether service in Vietnam, rather than solely exposure to Agent Orange, may have adversely affected the health of Vietnam veterans would eliminate the need for the costly and time-consuming feasibility study, and, at the same time eliminate the need for future studies on the health effects of Agent Blue, and other chemicals used in Vietnam.

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BEFORE THE  
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UNITED STATES SENATE

ON

AGENT ORANGE

Mr. Chairman and Members of the Committee, we are pleased to  
be here today to discuss

- the draft protocol for epidemiological studies of  
veterans exposed to Agent Orange, and
- the need to expand the study to determine whether service  
in Vietnam, rather than solely exposure to Agent Orange,  
may have adversely affected the health of Vietnam veterans.

Based on our prior work with military unit records to deter-  
mine the proximity of ground troops to areas sprayed with Agent  
Orange, other VA data bases proposed for use in the study,  
and our work on the potential adverse affects of Agent Blue  
and other pesticides used in Vietnam, we believe

- the proposed feasibility study to determine troop  
exposures would be costly with no guarantee that it  
would identify a population of ground troops with  
measurable exposure and would delay the start of  
the epidemiology study,

--the data bases the UCLA researchers propose using for the mortality and morbidity studies may contain inadequate or inaccurate information which could limit the usefulness of these studies, and

--there are serious questions about the possible adverse affects of exposure to Agent Blue and other chemicals used in Vietnam.

Expansion of the epidemiological study to determine whether service in Vietnam, rather than solely exposure to Agent Orange, may have adversely affected the health of Vietnam veterans would eliminate the need for the costly and time-consuming feasibility study and, at the same time eliminate the need for future studies on the health effects of Agent Blue and other chemicals used in Vietnam.

#### ORIGIN OF STUDY

Public Law 96-151 directed the Veterans Administration (VA) to design and conduct an epidemiological study of the long-term health effects of exposure to Agent Orange on Vietnam veterans. On May 1, 1981, VA awarded a contract to researchers from UCLA to design the study protocol. The researchers submitted a draft protocol to VA on August 6, 1981, which was sent for peer review to the Office of Technology Assessment (OTA), the Agent Orange Work Group, and others. Comments submitted to VA will be forwarded to the UCLA researchers who have 30 days in which to revise the protocol. The revised protocol may undergo additional peer reviews once completed.

The draft protocol includes four proposed studies. First, a feasibility study to determine whether exposure can be accurately estimated from military records. Next, the results of this study will be used to select populations for a historical cohort study. In this type of study, the exposed and nonexposed populations are followed to observe disease outcome.

Third, mortality studies to determine whether there is an unusual cause or causes of death among Vietnam veterans.

Finally, morbidity studies to determine whether Vietnam veterans are experiencing an unusual pattern of diseases or health problems.

#### FEASIBILITY STUDY TO ESTIMATE EXPOSURE

The draft protocol lacks adequate details on the feasibility study to determine whether exposure indexes, sufficiently accurate for the proposed historical cohort study, can be developed. Without additional details on the criteria to be used in developing these indexes, it is difficult to judge the likelihood that the study will succeed. However, previous records searches, similar to the one proposed for the feasibility study, have proven to be costly and time consuming with only limited results.

While it is possible to determine that personnel were in or near sprayed areas by comparing ground troop locations with herbicide spraying missions, it is difficult to develop estimates on the nature and extent of the exposure. For example, the Army and the Marine Corps have been able to determine the proximity of companies to sprayed areas, however, the exact location

of individuals assigned to these companies cannot be determined from military records. Also, companies may have reported numerous locations, only a general location, or no location on a given day. The problems encountered by the Army and the Marine Corps in gathering this information raise serious questions about the reliability of military records and the potential of the proposed feasibility study to establish individual exposure indexes.

In their August 1, 1980, progress report, the Interagency Work Group to Study the Possible Long-Term Health Effects of Phenoxy Herbicides and Contaminants (now the Agent Orange Work Group) noted the difficulties in developing a population with definable Agent Orange exposure which could be used for epidemiological study. Again, in their April 24, 1981, progress report, the Work Group noted that while Department of Defense (DOD) records searches were able to determine that certain units operated in proximity to areas sprayed with Agent Orange, they were not able to identify individuals or units whose exposure could be reliably documented. The Work Group concluded that ". . . a study based on no more than presumed exposure could represent such a serious flaw in scientific design as to be of questionable validity." The difficulty in documenting Agent Orange exposure was a major reason the Work Group recommended that large scale epidemiology studies should focus on determining if service in Vietnam, rather than solely exposure to Agent Orange, may have placed Vietnam veterans at a higher risk of suffering certain health problems.

Not only may the feasibility study have difficulty in measuring troop exposure to Agent Orange, but the records search and analysis necessary to complete the study would be costly and time consuming. In our November 16, 1979, report entitled "U.S. Ground Troops In South Vietnam Were In Areas Sprayed With Herbicide Orange" (FPCD-80-23), we noted that Army records from the Vietnam conflict are neither complete nor well organized because of the rapid pullout from Vietnam. Recent work performed by the Army for the Work Group demonstrated this problem. The Army's records search for the location of companies in one combat battalion during a 1 year period took 2 months, 265 staff hours, and cost about \$3,500 not including computer time or the cost of locating the approximately 2,400 personnel who were assigned to the unit during the 12-month period. Performing the same analysis for the approximately 330 Army combat battalions in Vietnam could cost over \$1.1 million. Also, it took almost 2 months to identify Army chemical units who operated in Vietnam and locate the records for these units.

Because of the difficulties in conducting the type of records search proposed for the feasibility study, we believe the epidemiology study should make maximum use of the information the Army has already compiled for the Work Group. The draft protocol does not mention whether previous Army records searches will be used in an epidemiological study.

#### MORTALITY STUDIES

The National Academy of Sciences has stated that it will

be impossible to execute any scientifically valid study of the health of Vietnam veterans exposed to Agent Orange in the absence of information about the mortality of veterans. The UCLA researchers proposed using VA's Beneficiary Identification and Records Locator Subsystem (BIRLS) to identify deceased Vietnam veterans for mortality studies to determine if there is an unusual cause of death or a pattern of causes of death among Vietnam veterans. The draft protocol notes that VA and the National Academy of Sciences have estimated the completeness of the BIRLS file for death certificates at better than 95 percent. However, this estimate is based on a 1973 survey of VA's Master Index, the predecessor of BIRLS, and no study has since been made of BIRLS completeness for death certificates. The National Academy of Sciences is currently planning a new study.

Although we have not evaluated the completeness of BIRLS for death certificates, BIRLS may not be updated regularly. In our report "Cost of VA Medical Care to Ineligible Persons is High and Difficult to Recover" (HRD-81-77, July 2, 1981), we noted that BIRLS records

- were not always created when veterans are discharged from the service,
- could indicate that a veteran has no record when actually VA has full information on the veteran, and
- could have been updated incorrectly or mistakes could have been made in creating the record.

While our evaluation of BIRLS focused only on eligibility determinations and not on death certificates, we believe it raises questions about the reliability of BIRLS which must be considered in determining the usefulness of this data base for the proposed mortality studies.

Recent congressional actions limiting eligibility for VA's burial allowance may also affect the usefulness of BIRLS in assessing the health status of veterans. The National Academy of Sciences informed both the House and Senate Veterans Affairs Committees that restrictions on eligibility for burial allowances may reduce the reporting of veteran deaths which will seriously impair the value of BIRLS as a source of information about veterans' health.

#### MORBIDITY STUDIES

The draft protocol proposed using VA's Agent Orange registry as a basis for morbidity studies comparing the health problems claimed by veterans with their recollection of exposure to Agent Orange. However, the registry was not intended to be used for epidemiological purposes. Rather, it was established to provide general information about the health status of veterans concerned about Agent Orange who presented themselves at VA medical facilities. Also, VA has identified problems with the registry's accuracy and reliability.

VA has identified several problems with the Agent Orange registry which would seriously affect its usefulness for research purposes. First, the veterans included in the registry are a self-selected sample and may not be representative of Vietnam



veterans exposed to Agent Orange. Second, many veterans included in the registry could not specify the number of times they were exposed to Agent Orange making it difficult to correlate exposure with health problems. Third, VA's Inspector General concluded that the value and integrity of the data in the registry was questionable because poorly designed data collection sheets caused keypunching errors, and there are no controls to prevent duplicate records from entering the registry. As a result, the registry contains inaccurate and unreliable data.

#### OTHER CHEMICALS USED IN VIETNAM

Veterans who served in Vietnam may have been exposed not only to Agent Orange, but to Agent Blue and other toxic chemicals.

Agent Blue or cacodylic acid was an organic arsenic-based herbicide used in Vietnam primarily for crop destruction, defoliation, and control of grasses around the perimeters of base camps. Estimates of the amount of Agent Blue used in Vietnam range from 1.1 million to 2.2 million gallons. While it is difficult to determine the number of personnel possibly exposed to Agent Blue, this herbicide's use on grasses surrounding base camp perimeters increases the possibility that troops were exposed.

According to the International Agency for Research on Cancer of the World Health Organization inorganic arsenic compounds cause skin and lung cancer in humans. Although cacodylic acid is an organic arsenic compound, some studies have indicated that it may be transformed into inorganic arsenic compounds in the environment.

Other pesticides which may have been used in Vietnam for insect or rodent control around base camps have now been banned from some or all uses in the United States because of adverse health effects reported in animal testing. These pesticides include DDT, chlordane, dieldrin, lindane, and mirex, all of which have been found to cause cancer in laboratory animals.

While the draft protocol mentions the possibility that exposure to other chemicals may confound the results of the proposed study, it assumes that these exposures are equally distributed among similar military units. The researchers will attempt to measure these exposures during the feasibility study. However, records do not adequately document uses of non-tactical pesticides and base camp perimeter spraying of herbicides. As a result, it is unlikely that the proposed study can determine the nature and extent of exposure to other chemicals used in Vietnam.

VA'S STUDY SHOULD  
BE EXPANDED

Public Law 97-72 authorizes, but does not require VA to expand the epidemiology study to determine whether service in Vietnam, rather than solely Agent Orange, may have adversely affected the health of Vietnam veterans. This law was enacted because of concerns that other factors related to service in Vietnam may be responsible for health problems being experienced by Vietnam veterans. An epidemiology study focusing on Agent Orange will only answer veterans' questions about one possible cause of their health problems. If such a study finds no adverse affects from exposure to Agent Orange, additional studies may be needed to determine whether other factors related to

Vietnam service may have caused health problems. As a result, a series of studies taking many years to complete may be necessary to determine whether service in Vietnam caused health problems. In a May 27, 1981, letter to the Chairman, Subcommittee on Hospitals and Health Care, House Committee on Veterans' Affairs, we supported expansion of the epidemiology study because it is consistent with the recommendation in our April 6, 1979, report entitled "Health Effects of Exposure to Herbicide Orange in South Vietnam Should Be Resolved" (CED-79-22) that the long-term health effects on military personnel of exposure to herbicides, including Agent Orange, in Vietnam be studied. Such a study could provide information on the general health of those most likely to have been affected by herbicides which would be valuable to VA and others concerned with determining if there is a basic health problem among personnel who served in Vietnam.

The UCLA researchers believe that an expanded study to determine the effect of service in Vietnam on veterans health, while possible, would not be useful because it would not identify the factors associated with diseases nor would it determine which of those serving in Vietnam were most likely to have been effected. However, VA has stated that it is not necessary to show the cause of a disability to award compensation, but only to show that the disability occurred or was aggravated during a veteran's military service. Also, since VA concedes that a veteran who served in Vietnam was exposed to herbicides it is not necessary to determine which veterans were effected.

Serious questions about the reliability of military records for developing individual estimates of exposure to Agent Orange and determining exposure to other chemicals used in Vietnam will make it difficult to determine whether exposure solely to Agent Orange can cause health problems. By expanding the epidemiology study to evaluate the effects of service in Vietnam on veterans health, VA could eliminate the need for costly and time-consuming additional studies of the effects of other factors present in Vietnam. This approach would also alleviate the two most serious problems the UCLA researchers have identified in their proposed study, those of developing individual exposure estimates and assessing the impact of confounding factors, such as exposure to other chemicals.

We continue to believe that scientific study of personnel who served in Vietnam would be most valuable to VA and others in determining if veterans who served in Vietnam are experiencing health problems resulting from their service.

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Mr. Chairman, this concludes our statement. We will be happy to respond to any questions you or other Members of the Committee may have.